



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/863,215

05/22/2001

Russell D. Beste

AERX070DIV

9634

24353

7590

05/14/2004

BOZICEVIC, FIELD & FRANCIS LLP
200 MIDDLEFIELD RD
SUITE 200
MENLO PARK, CA 94025

EXAMINER

NORDMEYER, PATRICIA L

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,215

Applicant(s)

BESTE, RUSSELL D.

Examiner

Patricia L. Nordmeyer

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7 and 9-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 7 and 9-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 14, 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 contains the limitation of "said first layer has laser ablated holes therein having diameters no greater than one micron". There is no support in the specification, original claims or drawings for describing the diameters of the holes in the first layer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elder et al. (USPN 3,770,560) in view of Haslow et al. (USPN 5,833,759).

Elder et al. discloses a laminated material (Column 11, line 38 and Figures 1 – 2A) comprising first and second layers (Figure 2A, #1 and 4) with a layer of adhesive in between (Figure 2A, #5). The layers of material are made of plastic material (Column 2, lines 54 – 58), where the layers of material have different coefficients of thermal expansion since many different types of plastic material are used (Column 3, line 66 to Column 4, line 25). The second layer has a thickness with a hole extending through it (Figure 2A, #7). The area of the first layer aligned with the hole of the second layer is not laminated to the second layer and is free of adhesive material (Column 4, line 64 to Column 5, line 8). The laminated material of Elder et al. has many uses including insulation material (Column 1, lines 54 – 64). However, Elder et al. fails to disclose the first layer comprising laser-ablated holes therein having diameters no greater than one micron.

Haslow et al. teaches a laminated material made with polyimide (Column 4, line 7) adhered to a substrate of polyethylene (Column 5, lines 16 – 18) with an adhesive (Column 6,

Art Unit: 1772

lines 21 – 35) having vias with diameters less than 75 microns that were formed with laser ablation (Column 2, lines 7 – 8 and Table 1, Example G) for the purpose of using the laminated material in electronic component packaging used in chip modules that require small dimensions (Column 1, lines 6 – 19).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the vias with a diameter smaller than 75 microns in Elder et al. in order to use the laminated material in electronic component packaging used in chip modules that require small dimensions as taught by Haslow et al.

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elder et al. in view of Haslow et al. as applied to claim 7 above, and further in view of Sumiya et al (USPN 4,786,558).

Elder et al., as modified with Haslow et al., disclose a laminated material (Column 11, line 38 and Figures 1 – 2A) comprising first and second layers (Figure 2A, #1 and 4) with a layer of adhesive in between (Figure 2A, #5). The layers of material are made of plastic material (Column 2, lines 54 – 58), where the layers of material have different coefficients of thermal expansion since many different types of plastic material are used (Column 3, line 66 to Column 4, line 25). The second layer has a thickness with a hole extending through it (Figure 2A, #7). The area of the first layer aligned with the hole of the second layer is not laminated to the second layer and is free of adhesive material (Column 4, line 64 to Column 5, line 8). The laminated

Art Unit: 1772

material of Elder et al. has many uses including insulation material (Column 1, lines 54 – 64).

However, the modified Elder et al. fail to disclose the first layer comprising polyimide, the second layer comprising polyethylene and the first layer having a peak-to-peak roughness of less than about 20 microns.

Sumiya et al. teach a laminated material, composite film, (Column 23, lines 56) made with a plastic film chosen from polyimide (Column 2, lines 18 – 21) coated with a water soluble compound of polyethylene (Column 26, lines 46 – 53), where the film has a surface roughness of between 0.5 and 20 μ (Column 13, lines 65) for the purpose of forming a protective layered structure (Column 1, lines 38 – 42) that includes insulation.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the polyimide and polyethylene with the desired roughness in Elder et al. in order to form a protective layered structure that includes insulation as taught by Sumiya et al.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elder et al. (USPN 3,770,560) in view of Sumiya et al. (USPN 4,786,558).

Elder et al. discloses a laminated material (Column 11, line 38 and Figures 1 – 2A)

Art Unit: 1772

comprising first and second layers (Figure 2A, #1 and 4) with a layer of adhesive in between (Figure 2A, #5). The layers of material are made of plastic material (Column 2, lines 54 – 58), where the layers of material have different coefficients of thermal expansion since many different types of plastic material are used (Column 3, line 66 to Column 4, line 25). The second layer has a thickness with a hole extending through it (Figure 2A, #7). The area of the first layer aligned with the hole of the second layer is not laminated to the second layer and is free of adhesive material (Column 4, line 64 to Column 5, line 8). The laminated material of Elder et al. has many uses including insulation material (Column 1, lines 54 – 64). However, Elder et al. fails to disclose the first layer comprising polyimide, the second layer comprising polyethylene and the first layer having a peak-to-peak roughness of less than about 20 microns.

Sumiya et al. teach a laminated material, composite film, (Column 23, lines 56) made with a plastic film chosen from polyimide (Column 2, lines 18 – 21) coated with a water soluble compound of polyethylene (Column 26, lines 46 – 53), where the film has a surface roughness of between 0.5 and 20 μ (Column 13, lines 65) for the purpose of forming a protective layered structure (Column 1, lines 38 – 42) that includes insulation.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the polyimide and polyethylene with the desired roughness in Elder et al. in order to form a protective layered structure that includes insulation as taught by Sumiya et al.

Regarding the limitation of the of the laminated material being configured for use in laser ablation, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Response to Arguments

8. Applicant's arguments with respect to claims 7 and 9 - 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Nordmeyer whose telephone number is (571) 272-1496. The examiner can normally be reached on Mon.-Thurs. from 7:00-4:30 & alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1772

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patricia L. Nordmeyer
Examiner
Art Unit 1772

pln
pln

[Signature]
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

5/11/04